

Guest Editorial

Environmental Health in Developing Countries: An Overview of the Problems and Capacities

Human health and environmental health are intimately intertwined. The existence of clean air, clean water, a stable climate, thriving wildlife, and well-managed natural resources determines the extent to which people can enjoy their basic rights to life, health, food, housing, livelihood, and culture.

Although humans have been aware of the crucial relationship between human health and the environment for millennia, there still is a tendency to separate health and environmental issues and deal with them independently. To protect the environment, promote human health, and practice sustainable development, this attitude must be changed.

Environmental health has received considerable political recognition since the 1972 Stockholm Conference on the Human Environment, which created the United Nations Environment Programme (UNEP). Health impacts of environmental degradation figured prominently in several chapters of Agenda 21 (United Nations 1993) adapted in 1992 at the United Nations Conference on Environment and Development. Several meetings of European ministers of environment and health have resulted in considerable improvements in the interaction among their ministries. A meeting of the health and environment ministers of the Americas was held in Ottawa, Ontario, Canada, 4–5 March 2002, and a similar meeting of the environment and health ministers of African countries is being planned for 2004. At the World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa, 26 August–4 September 2002, the Member States of the United Nations adopted the WEHAB (water, energy, health, agriculture, and biodiversity) Agenda (WSSD 2002). The WEHAB health agenda suggests many issues that must be addressed, including environmental health issues and the need for intersectoral cooperation, more information, capacity-building, and more financial resources.

The New Partnership for Africa's Development has several environmental and health goals in its action plan. Further, many multilateral environmental agreements, such as the Montreal Protocol (UNEP Ozone Secretariat 2000), the POPs (Persistent Organic Pollutants) Convention (UNEP, Intergovernmental Negotiating Committee 2001), and the PIC Convention [Prior Informed Consent (Rotterdam Convention 1998)], are health-related. Many countries, particularly in Europe, are developing national environmental health action plans and local environmental health action plans.

Despite the surge in international, regional, national, and local recognition of the link between the environment and human health, the burden of disease in developing countries is increasing. At the WSSD, Canada, with the support of the World Health Organization (WHO) and the UNEP, proposed the Health and Environment Linkages Initiative (UNEP 2002). This initiative now being implemented by the WHO and the UNEP, with the support of Canada, seeks to build capacity for more effective policy responses through consolidation of the knowledge base, development of strategies for intersectoral cooperation, and capacity building. The initiative will be completed by a multidisciplinary international group of experts from both developed and developing countries.



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An estimated 25% of all preventable illness is caused by environmental factors. In Africa, the environmental contribution is even higher, with approximately 35% of the burden of disease due to environmental factors (UNEP, United Nations Children's Fund, WHO 2002). Wastewater is treated in less than 35% of cities in the developing world, and between one-third and one-half of the solid wastes generated within most cities in low- and middle-income countries are not collected. Approximately 3.5–5 million cases of acute pesticide poisonings occur each year. Every year, over 5 million children 0–14 years of age die, mainly in the developing world, from diseases related to the environment, such as malaria, dengue, acute respiratory infections, and diarrhea.

Worldwide, 500 million children are debilitated by environmental diseases. Many, if not most, environmental threats to health are aggravated by persistent poverty, political conflicts, natural and man-made disasters, and social inequity. Every hour, 15,000 people worldwide die of an infectious disease, and more than half of those are children under 5 years of age; 2 million children under 5 years of age die every year from acute respiratory infections, for which indoor air pollution is a major causative factor (Gopalan and Saksena 1999; Smith et al. 1999; WHO 2002; World Resources Institute 1998). Most developing countries have no control over the noise generated by traffic, industry, public address systems, firework displays, and loud music. Noise interferes with concentration and sleep, causes physiologic stress, contributes to a reduction in cooperative behavior, triggers aggressive conduct, and may cause hearing loss. Another serious environmental and public health problem is caused by water pollution from animal waste runoff, as well as the widespread use of antibiotics and hormones to speed up growth of animals.

Some environmental health hazards should be a priority, including the lack of clean household water for consumption and hygiene, poor sanitation, air pollution, vector-borne diseases, chemical hazards, and unintentional injuries (accidents).

Environmental health is a multisectoral problem, which requires coordination and cooperation among the many different sectors in order to improve the lives of millions of people. An intersectoral approach can be effective only if all sectors involved—governmental departments (i.e., health, housing, energy, environment, water, industry and planning, agriculture) and members of the community (i.e., parents, teachers, health and social workers)—work together in a truly integrated partnership. Because individual sectors lack the necessary information and tools to completely understand the impact of their activities on human health, even seemingly beneficial development projects, such as dams and irrigation schemes, if not properly designed, can negatively affect health through the changing of habitats for disease vectors. The converse, however, may also be true; health projects can negatively affect other sectors: for example, a project to eliminate certain disease vectors may also eliminate a variety of other, possibly beneficial, species at the same time.

Human health and well-being are also intimately tied to the health of life-sustaining ecosystems; yet this complex relationship is rarely taken into account in either mainstream health or natural

resource programming. Health is given even less weight in international trade agreements and practices. A medical approach alone is not sufficient for a holistic understanding of the factors affecting human health: economic, social, and environmental components play equally important roles. Ecohealth approaches seek to identify the web of ecologically based factors affecting human health, as well as the links between them. Equipped with this knowledge, communities can better manage ecosystems to improve the health of the residents and the ecosystem. Interventions developed using this ecohealth approach can make cost-effective contributions to improving human health in developing countries.

Furthermore, some major shifts in local, national, regional, and global policies are required, such as population control, alleviation of poverty, an improved attitude toward nature, and harnessing traditional knowledge that has sustained societies in harsh and marginal lands for centuries.

In addition, there is a need to introduce an economic approach to environment and health through, for example, better identification of the quantitative links between environment, health, and economic growth (e.g., through green national accounting), or the introduction of liability and compensation schemes, taking into account the irreversibility of damage to health and the environment and intergenerational equity (cost imposed by the current generation on future ones).

To effectively tackle environmental threats to human health, knowledge must be consolidated and shared to influence policy at the national, regional, and global levels. The Health and Environment Linkages Initiative (UNEP 2002) could improve policy and provide a global partnership of governments, nongovernmental organizations, academic and research institutions, international organizations, and the public.

There is a real need to further educate health practitioners and the public about environmental health. Proper environmental education, incorporated into all levels of schooling, can help people to better protect themselves from environmental hazards and decrease the burden of disease caused by environmental factors. Even simple programs, such as instructing people in proper hygiene techniques, can have a significant impact on health.

Most of the common indicators of health, such as life expectancy and child mortality, have made tremendous improvements in developed countries throughout the last century: the average life expectancy has increased substantially and infant mortality rates have declined. However, these trends have not necessarily been reflected in many developing countries. In fact, life expectancy has begun to decrease in some areas of the world, most notably in sub-Saharan Africa. Much work is required in order to decrease the burden of disease in populations in developing countries. The capacities of countries to promote and protect human health through better environmental management must be increased if the 25% of preventable illnesses caused by environmental factors are to be controlled.

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